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The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

**Patentanmeldung Nr.    Patent application No.    Demande de brevet n°**

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Der Präsident des Europäischen Patentamts;  
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets  
p.o.

**R C van Dijk**

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Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:  
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.  
If no title is shown please refer to the description.  
Si aucun titre n'est indiqué se referer à la description.)

Device for hooking/unhooking LC connectors

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The present invention relates to a device for hooking/unhooking connectors of the LC type.

In a number of situations there is a need for interconnecting electronic modules efficiently. For example in the new Telecom equipment design, there is an heavy use of known SFF (Small Form Factor) and SFP (Small Form Pluggable) optical modules which can be interconnected on the front panel by LC optical connectors of a known type.

Typically the front panel width of said optical modules is small (i.e. 20mm / 25 mm). Therefore it is very difficult to hook / unhook (connect / disconnect) LC optical connectors manually by fingers.

In particular, with reference to Fig. 1, the LC connector has on a side a retaining latch engaging in a corresponding slot in the socket on the front panel of the optical module. To operate the LC connector manually a minimum width of the front panel should be required, which is greater than the available one. This is a drawback especially for removing / unhooking the LC connector, as it should be needed to press the retaining latch with the fingers.

This creates practical operating problems which render the LC optical connectors unusable with the available dimensions of the optical modules.

Therefore it is the main object of the present invention to provide a device for hooking/unhooking connectors of the LC type which solves the above mentioned problems.

The basic idea of the present invention is, in order to disconnect the LC connector, to provide a solution where pushing a slide from the front side, the connector retaining latch is pressed and the LC connector is unhooked.

These and further objects are achieved by means of an apparatus and method as described in the attached claims, which are considered an integral part of the present description.

The invention will become fully clear from the following detailed description, given by way of a mere exemplifying and non limiting example, to be read with reference to the attached drawing figure 1 wherein the device for hooking/unhooking connectors of the LC type is shown in front and side views.

As shown in fig. 1, on the front panel FP of the electronic module there are sockets SK especially designed to host the LC connectors LC.

The LC connector has on a side a "V" shaped retaining latch LC-RL which engages in a corresponding slot in the socket SK, when inserted in the socket (see the side views REST and PUSH in the figure).

5 According to the invention, an aperture guide (slot) is made close to the socket, where it is possible to thread a slide SL.

The front part of the slide SL comprises a "V" shaped protrusion VP towards the LC connector.

10 When the slide is in the rest position REST, the LC connector is inserted in the socket so as the "V" shaped retaining latch LC-RL engages in the socket SK.

By pushing the slide by fingers from the front side of the module, when the slide SL is in the push position PUSH at the end of its stroke, the "V" shaped protrusion VP of the slide SL presses the retaining latch LC-RL, which is released from the socket, and the LC connector is unhooked.

15 In the rear part of the slide SL, a spring (not shown in the figure), connected to the slide and to the electronic module, pushes back the slide SL in the rest position REST when released by the fingers.

After the slide release, it is possible to remove the LC optical connector, catching its plastic strain relief.

20 Further implementation details will not be described, as the man skilled in the art is able to carry out the invention starting from the teaching of the above description.

25 Many changes, modifications, variations and other uses and applications of the subject invention will become apparent to those skilled in the art after considering the specification and the accompanying drawings which disclose preferred embodiments thereof. All such changes, modifications, variations and other uses and applications which do not depart from the spirit and scope of the invention are deemed to be covered by this invention.

## Claims

1. Device for hooking/unhooking at least a connector of the LC type, the connector (LC) to be inserted in a sockets (SK) placed in the front panel (FP) of an electronic module and comprising a retaining latch (LC-RL) for the engagement in the socket (SK),  
5 characterized in that it comprises a slide (SL) with a "V" shaped protrusion (VP) placed in the front side of the module aside the socket, in such a position as by pushing the slide (SL) from the front side of the module, said "V" shaped protrusion (VP) presses said retaining latch (LC-RL) and the connector (LC) is unhooked.
- 10 2. Device according to claim 1, characterized in that the slide (SL) threads in an aperture guide on the front side of the electronic module, close to the socket.
3. Device according to claim 1, characterized in that it further comprises a spring in the rear part of the slide (SL), connected to the slide and  
15 to the electronic module, which pushes back the slide (SL) in a rest position (REST) when released.
4. Electronic module comprising a device according to any of claims 1 to 3.

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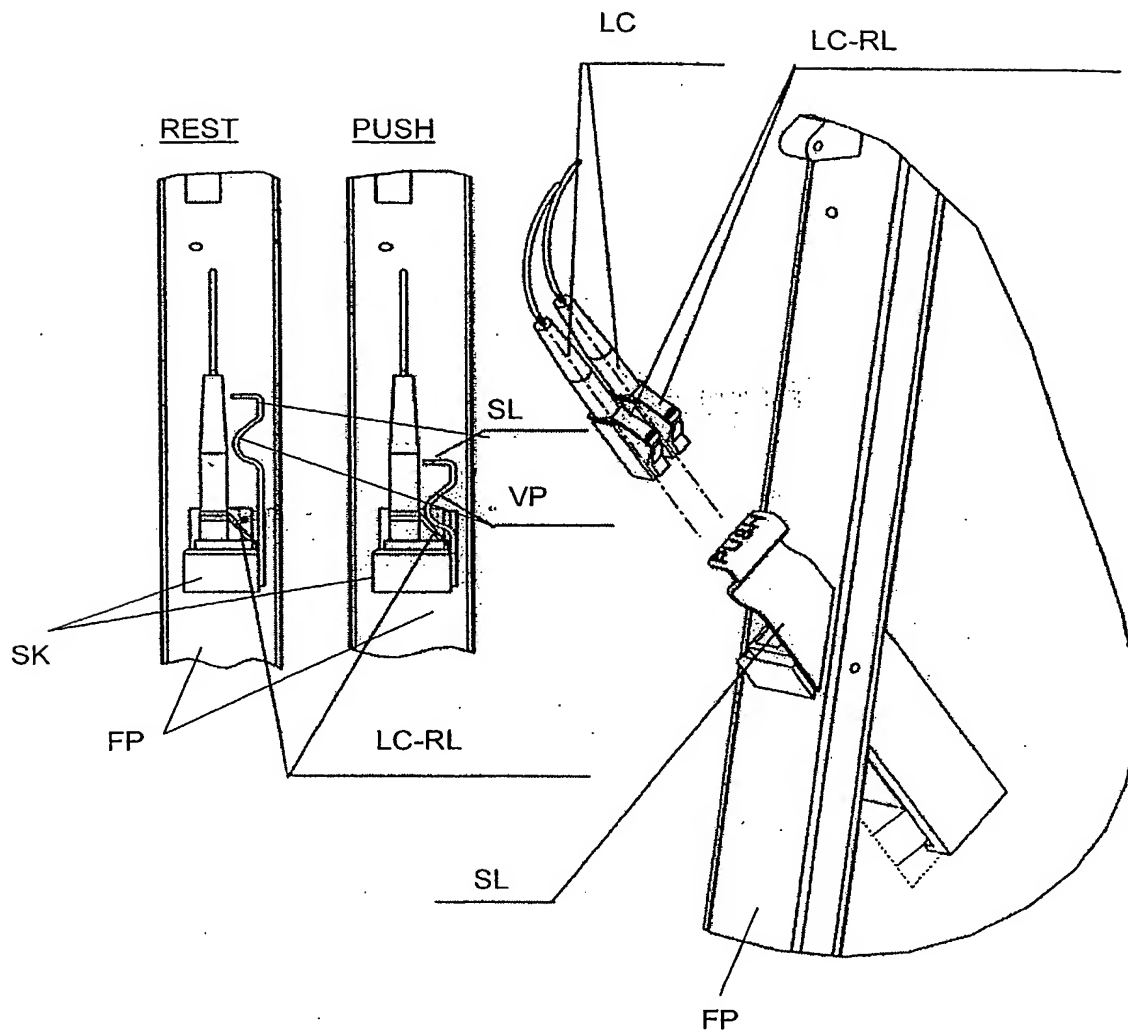


## Abstract

### Device for hooking/unhooking LC connectors

Device for hooking/unhooking connectors of the LC type, comprising a slide SL which, in order to unhook the LC connector, is pushed from the front side and presses a retaining latch of the LC connector.

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**FIG. 1**

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